REMARKS

Claims 1-3, 7, 13, 14, and 21-24 are currently pending. Claims 19, 29 and 30 were previously canceled. Claims 4-6, 8-12, 15-18, and 25-27 were previously withdrawn. Claims 1, 23, and 24 have been amended. These amendments are fully supported by the originally-filed specification. Claims 7, 20, and 28 have been canceled herein without prejudice. No new matter has been added by these amendments.

I. THE REJECTION UNDER 35 U.S.C. § 103(a) SHOULD BE WITHDRAWN

Claim 1-3, 7, 13, 14, 20-24, and 28 stand rejected under 35 U.S.C. § 103(a) as being allegedly obvious over United States Patent No. 5,998,457 to Kaddurah-Daouk ("Kaddurah-Daouk") in view of United States Patent No. 4,772,591 to Meisner ("Meisner"), United States Patent No. 5,888,553 to Grant *et al.* ("Grant"), United States Patent No. 5,756,469 to Beale *et al.* ("Beale '469") and United States Patent No. 5,716,926 to Beale *et al.* ("Beale '926"). Applicants respectfully traverse this rejection for the reasons discussed in the previous responses and the following reasons.

Independent claim 1 is directed to a method of treating at least one bone or cartilage condition which comprises administering to an animal a therapeutically effective amount of an agent comprising creatine pyruvate, or an analogue thereof, to treat bone or cartilage conditions, wherein the agent is administered in an amount of 1.4 to 285 mg per day and is essentially free of one or more of dihydrotriazine; dicyano-diamide; or creatinine. Claims 2, 3, 7, 13, 14, and 21 depend from claim 1 and, thus, also include those limitations.

Independent claim 22 is directed to a method of promoting growth and mineralization of bone or cartilage cells and tissues comprising administering to a subject a therapeutically effective amount of an agent comprising creatine pyruvate or an analogue thereof, to promote growth and mineralization of bone or cartilage therein, wherein the agent comprising creatine is essentially free of one or more of dihydrotriazine; dicyano-diamide; or creatinine.

Independent claim 23 is directed to a method of improving acceptance and osseous integration of bone implants which comprises administering to a subject in need of such treatment a therapeutically effective amount of an agent comprising creatine pyruvate or an analogue thereof, to improve acceptance and osseous integration of bone implants.

Independent claim 24 is directed to a method for accelerating healing in a subject having a defect in bone or cartilage tissue caused by trauma or surgery, which method

comprises administering to the subject a therapeutically effective amount of creatine pyruvate or analogue thereof.

A. Kaddurah-Daouk

As acknowledged by the Examiner in the Office Action, "Kaddurah-Daouk does not expressly teach the employment of creatine pyruvate for the treatment, or the particular amount administered, or the method may be employed for promoting growth and mineralization of bone, improving acceptance and osseous integration of bone, or accelerating healing as claimed in claims 22-24" (Office Action, page 2, ¶ 4). Kaddurah-Daouk also does not disclose or suggest a method for using an agent comprising creatine pyruvate, or an analogue thereof, to treat a bone or cartilage disorder wherein "the agent is administered in an amount of 1.4 to 285 mg per day" as required by claim 1. Kaddurah-Daouk merely discloses a "range of 2-8 gms/day to improve muscle function" and administering to "patients with congestive heart failure also in the range of several gm/day." Column 11, lines 29-33. Kaddurah-Daouk does not disclose or suggest administering the agent in an amount of 1.4 to 285 mg per day to treat at least one bone or cartilage condition, much less administering the agent in that amount for any condition.

Kaddurah-Daouk also does not disclose or suggest a method for improving acceptance and osseous integration of bone implants, accelerating the healing in a subject having a defect in bone or cartilage caused by trauma or surgery, or promoting growth and mineralization of bone or cartilage cells and tissues by administering creatine pyruvate as recited in independent claims 22, 23 and 24.

Accordingly, it is believed that the claims 1, 22, 23, and 24 and the claims depending therefrom are patentable over Kaddurah-Daouk.

B. Meisner

Meisner does not overcome the deficiencies of Kaddurah-Daouk. Meisner does not disclose or suggest using an agent comprising creatine pyruvate to treat a bone or cartilage disorder wherein "the agent is administered in an amount of 1.4 to 285 mg per day" as required by claim 1. Meisner does not even disclose or suggest the use of creatine pyruvate. Thus, it is believed that the present claims are patentable over Kaddurah-Daouk in view of Meisner.

C. Grant

Grant does not overcome the deficiencies of Kaddurah-Daouk or Meisner. Grant does not disclose or suggest administering an agent comprising creatine pyruvate, such as to treat a bone or cartilage disorder. Thus, Grant does not disclose or suggest an agent

comprising creatine pyruvate that is administered in an amount of 1.4 to 285 mg per day as required by claim 1. Grant also does not disclose or suggest a method for improving acceptance and osseous integration of bone implants, accelerating the healing in a subject having a defect in bone or cartilage caused by trauma or surgery, or promoting growth and mineralization of bone or cartilage cells and tissues as recited in independent claims 22, 23 and 24. Thus, it is believed that the present claims are patentable over Kaddurah-Daouk in view of Grant.

D. Beale '469

Beale '469 does not remedy the deficiencies of Kaddurah-Daouk, Meisner, or Grant. Beale '469 does not disclose or suggest an agent comprising creatine pyruvate that is administered in an amount of 1.4 to 285 mg per day as required by claim 1. Beale discloses that the "amount of the pyruvate and cortisol blocker composition administered to the mammal ranges from 1 to 100 gms per day. . . More specifically, a typical adult human... should be administered at least 3 gms of pyruvate.... and at least 0.1 gms of the cortisol blocker." Column 6, lines 32-42. Beale also discloses that "[i]n the method of the present invention, the mammal, preferably human, consumes at least 5 gms per day of the pyruvate/cortisol blocker composition." Column 6, lines 8-10. Thus, Beale '469 discloses the administration of an agent in amounts much greater than 285 mg per day. Thus, Beale '469 teaches away from administering an agent comprising creatine pyruvate in an amount of 1.4 to 285 mg as recited in claim 1.

In addition, Beale '469 also does not disclose or suggest a method for improving acceptance and osseous integration of bone implants, accelerating the healing in a subject having a defect in bone or cartilage caused by trauma or surgery, or promoting growth and mineralization of bone or cartilage cells and tissues as recited in independent claims 22, 23 and 24.

Thus, it is believed that the present claims are patentable over Kaddurah-Daouk in view of Beale '469.

E. Beale '926

Beale '926 does not remedy the deficiencies of Kaddurah-Kaouk, Meisner, Grant, and Beale '469. Beale '926 does not disclose or suggest creatine pyruvate. Moreover, Beale '926 does not disclose or suggest administering an agent comprising creatine pyruvate in an amount of 1.4 to 285 mg per day as recited in claim 1. Even if Beale '926 did disclose a creatine pyruvate in its composition, which it does not, Beale '926 discloses administering a composition in the range from 1 to 300 gms per day. Column 5, lines 27-28. Beale '926

does not disclose or suggest administering a composition comprising creatine pyruvate in an amount of 1.4 to 285 mg per day. By disclosing a range from 1 to 300 gms, Beale '926 teaches away from the present invention as recited in claim 1.

In addition, Beale '926 also does not disclose or suggest a method for improving acceptance and osseous integration of bone implants, accelerating the healing in a subject having a defect in bone or cartilage caused by trauma or surgery, or promoting growth and mineralization of bone or cartilage cells and tissues as recited in independent claims 22, 23 and 24.

Thus, it is believed that the present claims are patentable over Kaddurah-Daouk in view of Beale '926.

F. Kaddurah-Daouk in view of Meisner, Grant, Beale '469, and Beale '926

As discussed above, none of the references cited herein disclose or suggest using an agent comprising creatine pyruvate to treat a bone or cartilage disorder wherein "the agent is administered in an amount of 1.4 to 285 mg per day" as required by claim 1. In addition, one skilled in the art would find no motivation in the disclosures of the references to combine the teachings of these references to obtain the present invention, where none of the references cited herein disclose or suggest using an agent comprising creatine pyruvate to treat a bone or cartilage disorder wherein "the agent is administered in an amount of 1.4 to 285 mg per day," and where Kaddurah-Daouk, Meisner, Grant, and Beale '926 do not even disclose creatine pyruvate, and Beale '469 and Beale '926 teach away from administering an agent in an amount of 1.4 to 285 mg per day.

In addition, none of the references disclose or suggest a method for improving acceptance and osseous integration of bone implants, accelerating the healing in a subject having a defect in bone or cartilage caused by trauma or surgery, or promoting growth and mineralization of bone or cartilage cells and tissues by admininistering creatine pyruvate.

Thus, Kaddurah-Daouk, Grant, Meisner, Beale '469 and Beale '926, taken alone or in combination, do not disclose or suggest the presently claimed invention. Since Kaddurah-Daouk, Grant, Meisner, Beale '469 and Beale '926, do not disclose or suggest the presently claimed invention, it is believed that the present claims are patentable over the cited references.

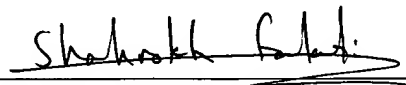
Accordingly, Applicants respectfully request withdrawal of the rejection and allowance of the present claims.

II. CONCLUSION

Applicants respectfully submit that the present claims are now in condition for allowance and request an early issuance of a Notice of Allowance in connection with the present application. If the Examiner wishes to discuss this case, then Applicants respectfully request a personal or telephonic interview to discuss any remaining issues and expedite the allowance of the application.

Respectfully submitted,

Date: June 13, 2005



By: Shahrokh Falati, Ph.D.
Patent Agent
Limited Recognition Under 37 CFR § 11.9(b)

35,340
For: Brian M. Rothery (Reg. No.)
JONES DAY
222 East 41st Street
New York, New York 10017
(212) 326-3939

Enclosures